

### **REMARKS/ARGUMENTS**

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter that Applicant regards as the invention. Review of the subject application in view of the present remarks is respectfully requested.

Applicant has amended claims 1-3 to correct several inconsistencies. Also, Applicant has added new claims 4 and 5. Support for the new claims is found in Fig. 1.

Claims 1-3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (U.S. Patent No. 6,709,397), hereinafter "Taylor" in view of Morley et al. (U.S. Patent No. 6,840,938), hereinafter "Morley", in further view of Blumenthal (U.S. Patent No. 5,048,529), hereinafter "Blumenthal". For at least the following reasons, the Examiner's rejection is respectfully traversed. The asserted combination of Taylor in view of Morley and Blumenthal, independently or in combination, does not teach or suggest all features of the claimed invention.

Regarding claim 1, it is alleged by the Examiner that Taylor teaches a first pulley provided at an end portion of the shaft different from an end portion connected to the motor, which allegedly anticipates the limitation "a first pulley attached to a tip of said rotation shaft". The Examiner cites Fig. 2 element 8 as support for this assertion. However, Taylor elaborates on this connection stating, "The hollow shaft 13 is connected to a carriage assembly 3 within the probe tip 1B. The shaft 14 is connected to a vertical bevel gear 6, within probe tip 1B and also within the carriage assembly 3. The carriage assembly 3 (best seen in FIGS. 2 and 4) is comprised of a horizontal bevel gear 7, a lower belt pulley 8, an upper belt pulley 9, a belt 10..." Therefore, Applicant respectfully asserts that the Examiner's interpretation of Taylor is overly

broad and fails to specifically disclose that “a first pulley attached to *a tip* of said rotation shaft”. Specifically, as shown in Fig. 4, the tip of the shaft of Taylor is only connected to the vertical bevel gear 6, which is in mechanical communication with a horizontal bevel gear 7. It is the horizontal bevel gear that is attached to the pulley in Taylor. Thus, as Applicant claims that the first pulley is attached to “a tip” of the rotation shaft, the pulley in Taylor fails to be attached to any portion of the shaft. Accordingly, Taylor fails to disclose “a first pulley attached to a tip of said rotation shaft” as limited in claim 1. Further, Applicant respectfully submits that there is no teaching of “a first pulley attached to a tip of said rotation shaft” in the disclosure of Morley. Morley discloses rotation shafts and pulleys, but fails to disclose any pulley attached to said tip of the rotation shaft. The shaft of Blumenthal is not connected to a pulley.

With further reference to claim 1, the Examiner alleges that Blumenthal teaches the use of a sliding mechanism for sliding a pulley. Applicant agrees that Blumenthal discloses a mechanism for sliding a pulley. However, Blumenthal fails to disclose the remainder of the limitation that the sliding mechanism is also for “fixing said tip portion so that said wire is not loosened”. The sliding mechanism of Blumenthal for sliding a pulley is used to change the moving angle of the wire, and thus merely changes the angle of the transducer 16. Blumenthal does not address the issue of keeping the wire taught, as is performed in the claimed invention. Thus, Blumenthal fails to disclose that the sliding mechanism for “fixing said tip portion so that said wire is not loosened” as in claim 1. Additionally, neither Taylor nor Morley disclose such a sliding mechanism.

Therefore, even if Taylor were combined with Morley and Blumenthal, every limitation of claim 1 would not be taught, suggested, or otherwise rendered obvious by the resulting combination. As a result, the prior art of record fails to render claim 1 obvious.

Additionally, Applicant respectfully asserts that the combination of Taylor, Morley and Blumenthal is improper. Morley is an invasive cauterizing and cutting tool for use with robotic surgical systems and designed to enter non-natural surgical cavities. Specifically, as shown in FIGS. 2 and 2a of Morley, the apparatus is not designed to be directly controlled by human operation. Moreover, Morley discloses that “robotic manipulators 32 preferably include a linkage 34 that constrains movement of tool 28. More specifically, linkage 34 includes rigid links coupled together by rotational joints in a parallelogram arrangement so that tool 28 rotates around a point in space 36...The links supporting the parallelogram linkage are pivotally mounted to set-up joints so that tool 28 further rotates about an axis 40...”. See col. 7, lines 33-44. Therefore, one of ordinary skill in the art of human-operated, natural cavity probes would not look to Morley as Morley’s apparatus has actuators and control mechanisms in an arrangement that are not conducive to direct human operation. Therefore, because the control mechanisms are not equivalent to one that would be used for direct human control as in Taylor and Blumenthal, one of ordinary skill in the art would not look to Morley for solutions. For this reason, the combination of Taylor, Morley and Blumenthal is improper, and thus fails to render claim 1 obvious.

Because claims 2 and 3 depend directly from claim 1, it is respectfully submitted that claims 2 and 3 are also now in condition for allowance for at least the same reasons as claim 1.

New claims 4 and 5 are asserted as being neither anticipated nor obvious in light of the prior art of record. Regarding claim 4, Taylor does not disclose the use of a wire, and Morley and Blumenthal disclose wires strung along the length of the devices. With reference to claim 5, neither Taylor, Morley nor Blumenthal disclose that a first pulley attached to the tip of the rotation shaft rotates about the axis of rotation for the rotation shaft.

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No.: 16-0820, our Order No.: NIHE-38852.

Respectfully submitted,  
PEARNE & GORDON, LLP

By: /jeffrey j sopko/\_\_\_\_\_  
Jeffrey J. Sopko, Reg. No. 27,676

1801 East 9<sup>th</sup> Street  
Suite 1200  
Cleveland, Ohio 44114-3108  
(216) 579-1700  
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